

UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF OHIO

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GE LIGHTING SOLUTIONS, LLC., :  
Plaintiff, : CASE NO. 1:12-cv-00354  
vs. : OPINION AND ORDER  
AGILIGHT, INC., :  
Defendant. :  
:

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JAMES S. GWIN, UNITED STATES DISTRICT JUDGE:

Plaintiff GE Lighting Solutions, LLC, sues defendant Agilight, Inc., claiming that several of Agilight's light emitting diode (LED) signage products infringe United States Patents Nos. [7,160,140](#) ("140 patent"), [7,520,771](#) ("771 patent"), [7,633,055](#) ("055 patent"), and [7,832,896](#) ("896 patent").<sup>1</sup> With this opinion, the Court construes three terms relevant to the patents, "annular gasket," "generally hollow member," and "IDC connector" or "insulated displacement connector."<sup>2</sup>

### I. Background

With these patents, Plaintiff GE taught LED string-light-engine structures to facilitate the use of LED lights in signage and other uses. In signs, LED string light are spaced to allow illumination

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<sup>1</sup>GE says Defendant Agilight infringes claims 1–3, 5, 6, 10 and 14 of the '140 patent; claims 1, 3, 6, 7, 8, 10, 12 and 15 of the '771 patent; claims 1–3, 7, 9 and 13 of the '055 patent; and claims 16–20 of the '896 patent. [Doc. [1](#).]

<sup>2</sup>The parties' initial claim construction chart suggested a dispute over the terms "generally spherical outer profile" and "substantially ellipsoidal inner profile." [Doc. [22](#) at 8] As the parties now indicate that they have reached an agreement on these terms, the Court does not construe them. [Doc. [26](#).]

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of a translucent cover without dark spots or bright spots. [[‘140 patent, at col. 1, ll. 10-32.](#)] With shallower LED can-depth—a desirable feature in some applications—LED modules must be closer to avoid dark spots. The GE patents teach ways to connect LED modules.

These patents describe technologies used in GE’s LED light strands. These strands are typically used in back-lit commercial signage. The ‘140 patent describes a plurality of LEDs connected by “an insulated flexible conductor,” or wire. [[‘140 patent.](#)] The ‘771 patent speaks to the application of the light strands in commercial signage. [[‘771 patent.](#)] The ‘055 patent concerns a method of sealing the light emitting portion (or “optoelectronic device”) onto a circuit board. [[‘055 patent.](#)] Finally, the ‘896 patent covers the use of the LEDS to “illuminat[e] a target plane at a defined uniformity.” [[‘896 patent.](#)]

The parties disagree regarding how certain terms within the patents should be interpreted and seek the Court’s construction of three disputed terms: “IDC connector” as used in the ‘140 and ‘771 patents, “annular gasket” as used in the ‘055 patent, and “generally hollow member” as used in the ‘055 patent. [Doc. [22](#)] Against this backdrop, the Court construes the disputed terms.

## **II. Legal Standard**

The construction of a patent, including terms of art used within its claims, is a question of law. *See* [\*Markman v. Westview Instruments, Inc.\*, 517 U.S. 370, 383-91 \(1996\)](#). In resolving a claim of patent infringement, a court first determines the meaning and scope of the patent. [\*Id. at 390.\*](#)

On November 20, 2012, this Court held a *Markman* claim construction hearing. [Doc. [27](#).] The parties have also presented this court with a joint claim construction and pre-hearing statement [Doc. [22](#),] as well as pre- and post-*Markman* hearing briefs on claim construction. [Docs. [24](#), [25](#), [29](#), [30](#).]

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This case presents one additional iteration of a constantly recurring problem with our patent system. In seeking a government sanctioned monopoly and in seeking to distinguish their claimed invention from earlier inventions, applicants narrow the breadth of their claimed invention. While submitting broad claim language, applicants give meaning to those claims with specifications that are markedly narrower than the broad claim language. Then, when the patent is granted, the patentee pushes for claim interpretations different than any specification or representation that the patentee had made to obtain the patent. Here, GE says that the patent's claims are broad enough to support GE's suggested claim-term interpretation though much of the specification language and drawings do not support GE's broad interpretation.

When interpreting an asserted claim, the Court first looks to the intrinsic evidence of record, i.e., the patent itself, most specifically, the patent claims, the specification and, if in evidence, the prosecution history. *See* [Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 \(Fed. Cir. 1995\)](#), *aff'd*, [517 U.S. 370 \(1996\)](#). The intrinsic evidence gives the most significant guidance regarding the interpretation of disputed claim language. *Vitronics Corp. v. Conceptronic, Inc.* [90 F.3d 1576, 1582 \(Fed. Cir. 1996\)](#).

In [Phillips v. AWH Corp., 415 F.3d 1303 \(Fed. Cir. 2005\)](#), the Federal Circuit reiterated the standards used to interpret patent claims. Among these, “the ‘bedrock principle’ of patent law [is] that ‘the claims of a patent define the invention to which the patentee is entitled the right to exclude.’” *Id. at 1312* (quoting [Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc., 381 F.3d 1111, 1115 \(Fed. Cir. 2004\)](#)). Thus, “the claims are ‘of primary importance’ in the effort to ascertain precisely what it is that is patented.” *Phillips, 415 F.3d at 1312* (quoting [Merrill v. Yeomans, 94 U.S. 568, 570 \(1876\)](#)); *see also* [Renishaw PLC v. Marposs Societa' per Azioni, 158](#)

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F.3d 1243, 1248 (Fed. Cir. 1998) (“The claims define the scope of the right to exclude; the claim construction inquiry, therefore, begins and ends in all cases with the actual words of the claim.”).

The claims, however, should not be read in isolation but “must be read in view of the specification, of which they are a part.” Phillips, 415 F.3d at 1315 (internal citation omitted). Thus, after considering the claim language, the court must next look to the rest of the specification. Vitronics Corp., 90 F.3d at 1582. The specification is “always highly relevant to the claim construction analysis” and “is the single best guide to the meaning of a disputed term.” Phillips, 415 F.3d at 1315 (internal citation omitted). And

[a]ssigning such a limited role to the specification [] is inconsistent with our rulings that the specification is ‘the single best guide to the meaning of a disputed term,’ and that the specification ‘acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication.’

Phillips, 415 F.3d at 1320-21 quoting Vitronics, 90 F.3d at 1582; see also ICU Med., Inc. v. Alaris Med. Sys., Inc., 558 F.3d 1368, 1374 (Fed. Cir. 2009) (“[N]ot only is the written description helpful in construing claim terms, but it is also appropriate to rely heavily on the written description for guidance as to the meaning of the claims.”) (internal citations and quotations omitted); Standard Oil Co. v. Am. Cyanamid Co., 774 F.2d 448, 452 (Fed. Cir. 1985) (“The specification is, thus, the primary basis for construing the claims.”).

More centrally, the terms of a claim “are generally given their ordinary and customary meaning. . . . that the term[s] would have to a person of ordinary skill in the art in question at the time of the invention . . . .” Phillips, 415 F.3d at 1312-13. Courts thus interpret claims through the eyes of a person having ordinary skill in the art or field of the invention. That person “is deemed to read the words used in the patent documents with an understanding of their meaning in the field, and

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to have knowledge of any special meaning and usage in the field.” [\*Id. at 1313.\*](#)

This Court may also consider other claims in the patent, including both asserted and unasserted claims. [\*Id. at 1314.\*](#) The usage of a term in one claim may shed light on the meaning of the same term in other claims. The claims “are part of ‘a fully integrated written instrument,’ consisting principally of a specification that concludes with the claims. For that reason, claims ‘must be read in view of the specification of which they are a part.’” [\*Id. at 1315\*](#) (quoting [\*Markman, 52 F.3d at 978-79.\*](#))

If the use of the ordinary or accustomed meaning does not cause the claim to become meaningless, courts will typically find the ordinary or accustomed meaning to be the meaning that should be used. [\*W.E. Hall Co., Inc. v. Atlanta Corrugating, LLC, 370 F.3d 1343, 1350 \(Fed Cir. 2004\)\*](#) (noting that “[w]e indulge a ‘heavy presumption’ that the claim terms carry their ordinary and customary meaning”); [\*SuperGuide Corp. v. DirecTV Enter., 358 F.3d 870, 874 \(Fed. Cir. 2004\).\*](#)

Claim terms should be construed, when possible, “in a manner that renders the patent internally consistent.” [\*Budde v. Harley-Davidson, Inc., 250 F.3d 1369, 1379-80 \(Fed. Cir. 2001\).\*](#)

Some of the disputed claim terms are extremely broad. For example, the parties dispute what interpretation should be given the claim term “generally hollow member,” a term that is so non-specific that its general understanding could include anything that is not solid. When interpreting a claim term that is exceedingly broad, the Court can look to the specifications to better find how a person of ordinary skill in the art would interpret the claim term. [\*Decisioning.com, Inc. v. Federated Dept. Stores, Inc., 527 F.3d 1300, 1308 \(Fed. Cir. 2008\).\*](#)

### **III. Discussion**

The parties dispute the meanings of the terms “annular gasket,” “generally hollow member,”

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and “IDC connector” as used in these patents. The Court construes them in turn. [Markman, 517 U.S. at 391.](#)

#### A. “Annular Gasket”

The parties first dispute what interpretations should be given the claim term “annular gasket” Defendant Agilent argues that “annular gasket” describes a planar or flat shaped structure. Despite having used planar or flat shaped gaskets in all its drawings and arguably in all its written descriptions, GE says “annular gasket” should be interpreted to read on gasket type elements that are not flat.

GE uses the term “annular gasket” in several of the patents involved in this lawsuit. Independent claim 1 of the ‘055 patent claims “[a] method comprising: disposing an optoelectronic device on a circuit board . . . disposing an annular gasket on the circuit board to surround the optoelectronic device; and sealing the circuit board with a sealant that also covers at least an outer annular portion of the annular gasket.” [‘055 patent at col. 10 ll. 39-45.](#)

For its interpretation, Plaintiff GE says that ““annular gasket means an element that surrounds an optoelectronic device and has a central opening in which the optoelectronic device is disposed.” [Doc. [22](#) at 6.] Responding, Defendant Agilight says that ““annular gasket' describes a two-sided planar object with an opening formed in its center.” [Doc. [22](#) at 6.] The parties thus principally disagree over whether the “annular gasket” term requires reference to the optoelectronic device and whether it is “planar.”

In their arguments, both sides cite *The Concise Encyclopedia of Science and Technology* as providing a definition of gasket consistent among those skilled in this art. [Docs. [25](#) at 8; [28](#) at 18.] The *Encyclopedia* defines a gasket as

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[d]eformable material used to make a pressure-tight joint between stationary parts, such as cylinder head and cylinder, which may require occasional separation. Gaskets are known as static seals, as compared with packing or dynamic seals. In packings, the parts are frequently in motion, as in piston rods and valve stems.

Gaskets are made of sheet materials such as natural or synthetic rubber, cork, vegetable fiber such as paper, asbestos and plastic pastes, or of soft metallic materials such as lead and copper. Rubber in the form of O-rings is used for light pressure

[Doc. 25 at 8.] Taking these areas of agreement and disagreement as a guide, the Court construes the term. *See Vivid Techs., Inc. v. Am. Sci & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (A court construes terms “only to the extent necessary to resolve the controversy.”).

The Court finds that “annular gasket” in the ‘055 patent should not include the reference to the optoelectronic device. Tellingly, the patent explains that the annular gasket “surround[s] the optoelectronic device” and that “sealant . . . covers at least an outer annular portion of the annular gasket, but does not cover the optoelectronic device.” [‘055 patent, at col. 10, ll. 40-47](#). The patent thus evinces a relationship between the annular gasket and the optoelectronic device. Detailing that the “annular gasket” is “dispos[ed] . . . on the circuit board to surround the optoelectronic device” would be circular if the term annular gasket already meant “an element that surrounds an optoelectronic device.” [‘055 patent, at col. 10 ll. 44-47](#). Accordingly, the court believes that the construction of “annular gasket” should not reference the optoelectronic device.<sup>3</sup>

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<sup>3</sup>/GE points to the Federal Circuit’s instruction that a “claim term will not receive its ordinary meaning if the patentee acted as his own lexogapher and clearly set forth a definition of the disputed claim term in either the specification or prosecution history.” *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002). It points to the description of the ‘055 patent which says “[a]s used herein, the term ‘annular’ means that the annular gasket surrounds the optoelectronic device and has a central opening in which the optoelectronic device is disposed.” [Doc. 1-3 at col. 5, ll 24-27.] First, the Court expresses doubt that this is a coherent definition of any term, much less “annular gasket” as opposed to merely “annular.” Taken literally this phraseology suggests that “annular” would include the term “annular gasket” leading to something of a definitional renvoie circle. Such a definition deprives the term of any useful clarity. Cf. *CCS Fitness*, 288 F.3d at 1367. (“[A] claim term also will not have its ordinary meaning if the term chosen by the patentee so deprives the claim of clarity as to require resort to the other intrinsic evidence for a definite meaning.”) Instead the Court believes that description defines the placement of the annular gasket, which, then, does not describe

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Determining whether the claim requires a “planar” object is more difficult. The parties agree that gaskets are generally used as sealants, and are static sealants in contrast to dynamic sealants, which could be injected. While the Court finds that an annular gasket would prototypically have two planar surfaces, the patent claims do not exclusively describe such an embodiment. As counsel for Agilight agreed at oral argument, a simple “o-ring” is also an annular gasket. [Doc. [28](#) at 13.] Even though GE patent drawings and specifications suggest the gasket should have a planar shape, the broader claim language trumps those representations. The annular gasket bonds between stationary parts to seal a cavity irrespective of whether the gasket is planar shaped.

Accordingly, the Court finds that the term “annular gasket” is a three-dimensional, deformable material used to make a pressure-tight joint between stationary parts, with an opening in its center capable of sealing off its center area when bonded statically between stationary parts on its top and bottom.

#### **B. “Generally hollow member”**

Independent Claim 1, of the ‘055 patent describes a structure: “disposing the circuit board in an injection mold that includes a generally hollow member receiving the optoelectronic device and having an edge sealing against the gasket.” [‘055 patent, at col. 10, ll. 49-52](#). GE says that “‘generally hollow member’ means a member having an isolated volume sufficient to receive a light emitting diode package so as to isolate the light emitting diode package from injected sealant material.” [Doc. [22](#) at 6.] Agilight says that “generally hollow member” means

a slender linear object or pin which is attached to the upper part of a mold. When the upper and lower portions of a mold come together to enable the overmolding of a

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the annular gasket itself. Moreover, as the claim trumps the specification, the foregoing analysis of the term’s use in the claims is more important than the description.

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circuit board, the space defined by the inner diameter of the generally hollow member permits the generally hollow member to fit over and protect an LED affixed to the circuit board.

[Doc. [22](#) at 7.] Again, the Court assumes the role of “persons of skill in the field of the invention” and construes the term. [\*Vivid\*, 200 F.3d at 804](#).

The parties agree that the generally hollow member acts to protect or isolate the LED during the injection of sealing material. The parties disagree whether “generally hollow member” need be “slender” and a “pin”; disagree whether the claim term should refer to injected sealant; and disagree regarding the relationship of the generally hollow member to the mold, and, in turn, the circuit board. GE cites the patent’s description, which says that the “generally hollow member” is intended to denote a member having an isolated volume sufficient to receive the light emitting diode package so as to isolate the light emitting diode package from the injected sealant.” [‘055 patent, at col. 6, ll. 24-27](#). Agilight points to other description language explaining that “the injected sealant material is blocked by pins or generally hollow members and the cooperating annular gaskets from reaching the light emitting diode packages.” [‘055 patent, at col. 6, ll. 61-63](#). From this description, Agilight says that the generally hollow member should be defined as a pin or slender.

First, the Court sees no basis to include the term “slender” in the definition of generally hollow member. The term finds no foundation in the claim language, and seems, instead, to come from using the term “pin” in the description. But the specifications describe “pins or generally hollow members,” suggesting alternatives. The Court finds no sufficient argument to require the specification term “slender” be incorporated into the claim. The Court declines to require that the generally hollow member be “slender.”

Nor does the Court agree with Agilight that the description’s reference to “pins” should

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govern the definition of “generally hollow members.” The phrase “sometimes called” used to introduce the term “pins” suggests that “pin” is an alternative term of art, and not a descriptor of the “generally hollow member.” Moreover, “sometimes” implies that not all “generally hollow members” are necessarily called “pins.” Including “pin” in the construction of “generally hollow member” would narrow the claim beyond the scope described in the patent. The Court declines to do so.

The Court also finds that generally hollow member should include a reference to its attachment to the mold which in turn permits sealing to the circuit board. Claim 1 of the ‘055 patent says that the “generally hollow member” has “an edge sealing against the gasket” and that the mold “includes a generally hollow member.” [‘055 patent, at col. 10, ll. 50-52](#). But it does not describe the generally hollow member itself. Because the “mold” includes the “generally hollow member,” the generally hollow member is related to the mold. Accordingly, the Court adopts Agilight’s proposal that the generally hollow member is in part defined by its attachment to the mold.

Similarly, the Court believes that the definition of generally hollow member should be consistent with the generally hollow member’s function of isolating the LED from the injected sealant. Indeed, the inventors noted in response to an office action that it is not “merely” a generally hollow member, but that “the injected sealant material [is] blocked by the generally hollow member and the annular gasket from reaching the optoelectronic device.” [Doc. [24-2](#) at 31.] The ‘055 patent inventor thus claimed that the generally hollow member was independent of the sealant and was necessarily not the sealant. Indeed the claim’s reference to “the sealant material being blocked by the generally hollow member” suggests that the generally hollow member cannot be the sealant. That the generally hollow member’s very purpose is to cause “the sealant material being blocked by

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the generally hollow member” lends support to this construction.

Accordingly, the Court thus construes “generally hollow member” to mean a tubular or prism-like element that is capable of attaching to a mold and is capable of acting with a gasket to isolate its contents (such as an LED) from sealants.

### C. IDC Connector

Finally, the parties dispute the term “IDC connector,” which the parties agree stands for “insulation displacement connector.” The term appears in both the ‘140 and ‘771 patents. GE says it means “a connector that displaces insulation surrounding an insulated electric conductor to provide an electrical connection with the conductor.” [Doc. [22](#) at 2] Agilight’s proposed definition is considerably more involved:

AgiLight contends that the terms “insulation displacement connector” and “IDC connector” as used in the claims in both the ‘140 and ‘771 patents refer to a three-part Insulation Displacement Connection Connector assembly. The first part of the Insulation Displacement Connector assembly is a substantially U-shaped, thin piece of electrically conductive material. Built around the substantially U-shaped thin piece of electrically conductive material are the other two parts of the assembly, an IDC connector housing and an IDC cover. A snap-together, mechanical type connection allows the IDC connector housing and the IDC cover to connect with one another. Once the IDC cover is snapped onto the IDC housing, the wire placed within the substantially U-shaped slot or throat that is formed in or by the thin piece of electrically conductive material is prevented from moving out of the substantially U shaped slot or throat.

[Doc. [22](#) at 2-3] While the parties acknowledge that the term is commonly used in electrical engineering to connote a range of devices, they dispute whether the ‘771 and ‘140 patents teach a more specialized IDC connector.

The Court finds that they do. The Court looks first to the claims and then to the specifications for guidance. First, Claim 1 of the ‘771 patent notes that the string light engine

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includes an “IDC connector including a terminal that provides an electrical connection between the conductor and the circuitry of the respective support.” [‘771 patent, col 10, ll 23-26](#). A “claim term will not receive its ordinary meaning if the patentee acted as his own lexogapher and clearly set forth a definition of the disputed claim term in either the specification or prosecution history.” [CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 \(Fed. Cir. 2002\)](#). Here, one component of the IDC connector appears in the claim itself—that it “includ[es] a terminal.” Accordingly, any definition of the IDC connector must include a terminal component.

Second, dependent claim 10 of the ‘771 patent explains that the string light engine contains an “IDC connector being mechanically connected to the circuitry and the LED being mounted on the support.” [‘771 patent at col 11, ll 2-4](#). This phraseology again suggests that the IDC connector is not any generic IDC connector, but that the way that the IDC connector connects with the “the support” is a part of the IDC connector’s definition. The specification confirms the importance of the mounting feature. It explains that “securely mounting the string light engine into the device has been an issue.” [‘771 patent at col 1, ll 41-42](#). That is, the design of the support and its method of connection to the IDC connector was central to the inventors’ design. Construing IDC connector in a more pedestrian sense without some greater definition would neglect the essence of the innovation.

Third, the ‘140 patent confirms both of the preceding points. The ‘140 patent explains that the IDC connector “compris[es] a terminal that is inserted into the conductor to provide an electrical connection between the conductor and the circuitry of the first support.” [‘140 patent at col. 7, ll 1-3](#). This portion of the claim reinforces that the terminal is part of the IDC connector, and the conductor

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is not.<sup>4</sup> Furthermore, it says that the terminal connects the conductor and the support. After the preposition “between” there is no further reference to “terminal” in relation to the “support.” This omission suggests that the terminal and the support are part of the same entity, namely the IDC connector. The independent claim of the ‘140 patent confirms this understanding. It claims “a first IDC connector extending away from the support and in communication with the electrical circuitry of the first support.” [‘140 patent at col. 7, ll. 1-3](#). This phraseology suggests that the support is a part of the IDC connector, but that the circuitry is not.

Fourth, dependent claim 12 of the ‘140 patent explains that “the first IDC connector includes a first terminal that contacts the first conductor wire, a second terminal that contacts the second conductor wire, a third terminal that contacts the third conductor wire, and a fourth terminal that contacts the third conductor wire.” [‘140 patent at col. 8, ll. 6-12](#). This claim suggests that the IDC connector must be capable of connecting to three wires with four contacts. And the next dependent claim, claim 13, explains that there must be “an insulative barrier disposed between the third terminal and the fourth terminal.” [‘140 patent at col. 8, ll. 13-15](#). The Court thus incorporates these understandings.

Accordingly, the Court finds that the term “insulation displacement connector” or “IDC connector” as used in these patents means the Insulation Displacement Connector assembly with three key components. First, the connector consists of a housing of two parts. Second at least one part of the housing includes four electrical terminals. Third, the two parts can snap together to enclose three insulated conductors such as wires. The snapping together of the two component parts

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<sup>4</sup>Of course, the ordinary usage of conductor complicates this reasoning, for when two terminals link, they can become conductors. Thus, here, the Court generally understands the “terminal” to be the end of the IDC connector that connects with another terminal, that is of a different shape, referred to in the patent as the conductor. [Doc. [28](#) at 44.]

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allows the terminal to cut or pierce through the insulation of that conductor, while at the same time forestalling the conductor from moving out of or detaching from the assembly. Once this connection is made between the terminal of the IDC connector and the insulated conductor, the two may be conductive.

IT IS SO ORDERED.

Dated: December 13, 2012

s/ James S. Gwin  
JAMES S. GWIN  
UNITED STATES DISTRICT JUDGE